



institute
imdea
social sciences



working papers series

in Economics and Social Sciences

2011/18

**In search of the
'economic dividend' of devolution:
Spatial disparities, spatial economic
policy and decentralisation in the UK**

by **Andy Pike, Andrés Rodríguez-Pose,
John Tomaney, Gianpiero Torrasi and Vassilis Tselios**

October 2011

Ctra. Colmenar Viejo km. 14, 28049 Madrid, Spain

<http://www.socialsciences.imdea.org/>
<http://repec.imdea.org>
contacto.cienciassociales@imdea.org

www.imdea.org

In search of the ‘economic dividend’ of devolution: Spatial disparities, spatial economic policy and decentralisation in the UK

by

Andy Pike^a, Andrés Rodríguez-Pose^b, John Tomaney^{a,d},
Gianpiero Torrìsi^a and Vassilis Tselios^c

^a Centre for Urban and Regional Development Studies (CURDS), Newcastle University, UK

^b Department of Geography and Environment, London School of Economics, UK and IMDEA Social Sciences Institute, Madrid, Spain

^c Department of Economic Geography, Faculty of Spatial Sciences, University of Groningen, The Netherlands

^d Institute for Regional Studies, Monash University, Australia



In search of the ‘economic dividend’ of devolution: Spatial disparities, spatial economic policy and decentralisation in the UK

Abstract

After a decade of devolution and amid uncertainties about its effects, it is timely to assess and reflect upon the evidence and enduring meaning of any ‘economic dividend’ of devolution in the UK. Taking an institutionalist and quantitative approach, this paper seeks to discern the nature and extent of any ‘economic dividend’ through a conceptual and empirical analysis of the relationships between spatial disparities, spatial economic policy and decentralisation. Situating the UK experience within its evolving historical context, we find: i) a varied and uneven nature of the relationships between regional disparities, spatial economic policy and decentralisation that change direction during specific time periods; ii) the role of national economic growth is pivotal in explaining spatial disparities and the nature and extent of their relationship with the particular forms of spatial economic policy and decentralisation deployed; and, iii) there is limited evidence that any ‘economic dividend’ of devolution has emerged but this remains difficult to discern because its likely effects are over-ridden by the role of national economic growth in decisively shaping the pattern of spatial disparities and in determining the scope and effects of spatial economic policy and decentralisation.

Keywords: Economic Dividend, Devolution, Spatial Disparities, Spatial Economic Policy, Decentralisation, UK



Introduction: In search of the ‘economic dividend’ of devolution

The idea of an ‘economic dividend’ has gained significant momentum internationally and in the UK as a powerful and persuasive argument in the politics and economics of decentralisation, reflecting a broader international shift from identity to economy rationales in contemporary forms of state modernisation and ‘rescaling’ (Lobao *et al.* 2009; Rodríguez-Pose and Sandall 2008). The ‘economic dividend’ is principally articulated in terms of generating allocative and productive efficiencies alongside the accountability and participation benefits of decentralisation for decision-making and co-ordinating collective action in support of economic development (Rodríguez-Pose and Gill 2005). In the UK in the late 1990s, for example, political advocates argued for devolution in Wales to improve its economic performance and productivity to create more and better jobs (Davies 1999). Devolved regional government in the English regions too was promoted as an ‘economic imperative’ to address the ‘economic deficit’ of persistent spatial disparities between London, the Greater South East region and the rest (Murphy and Caborn 1996).

Yet, despite its often active political promotion, assessments of the ‘economic dividend’ are unclear. In the UK, the ESRC’s 6-year research programme on *Devolution and Constitutional Change* concluded that:

There is little evidence to suggest that an ‘economic dividend’ should be expected from devolution, or has yet appeared. There is much to suggest that devolution – even administrative devolution in England – will lead to a widening of regional economic disparities, and that there is only a limited



capacity on the part of UK government to intervene to secure UK wide economic balance (Jeffery 2006: 1).

More than a decade on from the initial constitutional and devolutionary reforms in the UK in the late 1990s, it is timely to assess and reflect upon the evidence and enduring meaning of the ‘economic dividend’ of devolution in the UK. Little research has been undertaken on this issue to date because it is a far from straightforward task, given the view that its impacts are “likely to be complex, subtle and difficult to measure” (Jeffery 2006: 1). Thorny problems include: the contested conceptualisation of any ‘economic dividend’ and its relationships to other forms of dividend (social, political, cultural); the development of appropriate proxy measures relevant to particular national contexts; assembling available data of appropriate quality, historical coverage and international comparability; disentangling and isolating the effects of decentralisation; and, attributing causation amongst decentralisation’s myriad relationships with broader economic and institutional change over time (Ashcroft *et al.* 2005; McGregor and Swales 2005). Despite such challenges, the need to examine the evidence is pressing because it is recognised that “weakly supported” and “optimistic claims” for any ‘economic dividend’:

...drew heavily on academic research on a ‘new’ economic regionalism which was perhaps too quick to draw generalisations from a combination of ambitious theory and a narrow range of case studies. More recently researchers have been more sanguine, balancing their initial optimism with a fuller consideration of the constraints on improved economic performance and



on the negative economic impacts that devolution could bring (Jeffery 2006:1).

The situation in Wales is illustrative of the resonance and inconclusive status of the issue. Accepting that it was the “dirty little secret” of devolution debates, the former Chair of the Yes Campaign in Wales acknowledged the lack of a necessary and directly causal connection between decentralisation and economic development and its geographical unevenness: “In fact...all the important economic indicators in Wales are going the wrong way. You could say there has been an economic dividend for Cardiff, but not beyond that...The Labour Government has assumed that devolution is the recipe for economic development, but in fact it’s just one of the ingredients” (Kevin Morgan, Cardiff University, cited in Hayman 2008: 1). Further studies are required, then, especially given that while the economic benefits of decentralisation are “widely accepted amongst governments and international organisations alike, the empirical proof for this proposition remains scant” (Rodríguez-Pose *et al.* 2009: 2041; see also Balaguer-Coll *et al.* 2010; Tomaney *et al.* 2011).

The approach taken here integrates its institutionalist and quantitative analysis in the context of the unfolding histories of institutional, political and economic change over time and space within the particularity of the UK state. The argument is that analysis of any ‘economic dividend’ of devolution in the present needs to be rooted in the past evolutions of spatial disparities, spatial economic policy and decentralisation within the political-economies of particular nation states. The historical dimension of the analysis is critical in understanding the path dependencies that shape the evolution of



institutional structures and policy approaches over time and space, reflecting legacies of political choices, strategies and struggles.

With the aim of assessing and reflecting upon the evidence and enduring meaning of the ‘economic dividend’ of devolution in the UK over a decade after the institutional and political reforms introduced from 1997, the paper first addresses some conceptual issues in considering the relationships between spatial disparities, spatial economic policy and decentralisation. Despite the constraints of comparable data availability, the analysis then focuses upon the period 1984-2007 in an attempt to discern the existence (or otherwise), extent and nature of any ‘economic dividend’ arising from the inter-relation of spatial disparities, spatial economic policy and devolution in the UK. Last, some conclusions and reflections are provided.

Spatial disparities, spatial economic policy and decentralisation

Given its complex and unclear inter-relationships, the approach here situates the consideration of any ‘economic dividend’ arising from devolution within an understanding of the changing relations between spatial disparities, spatial economic policy and decentralisation. An evolution is evident in the ways in which spatial disparities are understood and explained with implications for how spatial economic policy and decentralisation are formulated and implemented. We discern stylised kinds of approaches – redistributive, free-market and growth-oriented – with different characteristics concerning their economic theory, causal explanation of spatial disparities, adjustment process, policy rationales and instruments, institutional





organisation, geographical focus and scope, political-economic project and language (Table 1). Spatial economic policy is understood as forms of economic policy with spatial intent – such as regional or urban policy. We recognise the need and difficulty of disentangling this from economic policy without explicit spatial intent but with spatial implications – such as macro-economic, welfare or defence policy. We acknowledge too the more recent debates about ‘spatially neutral’ or ‘blind’ policy that is focused upon ‘people’ rather than ‘place’ and explains spatial disparity as the compositional outcome of sorting processes driven by rational economic agents (see, for example, Overman 2010).

Transitions in spatial economic policy reflect developments within economic theory and their differing causal explanations for spatial disparities and views of adjustment processes. These conceptual and theoretical ideas are then mediated and translated into policy rationales and instruments within the institutional structures of particular national political economies (Pike and Tomaney 2009). Uneven, partial and messy transitions, overlaps and struggles undoubtedly mark the political economy of such shifts that play out in different ways in different national contexts. The ‘spatial Keynesianism’ (Martin and Sunley 1997) that marked state intervention through redistributive forms of policy focused upon investment, stimulation of cumulative causation and management of aggregate demand and employment in the regions has been constructed and unravelled toward free market forms in different ways over differing time periods in different national settings. Emergent approaches in the growth-oriented form that echo these uneven transitions are evident in the OECD’s (2010) ‘new paradigm’ (Table 2) and in the UK in New Labour’s ‘new regional policy’ between 1997 and 2010 (Balls and Healey 2001).

<Tables 1 and 2 about here>

Integrally related to the changes in how spatial disparities are interpreted and spatial economic policy formulated is a marked shift in the geographical scale, level and form of institutional organisation, delivery, government and governance from centralisation toward varied forms of decentralisation. Indeed, it is critical to recognise that devolution is only one particular form of decentralisation and itself comes in different shapes and sizes, driven top-down and/or bottom-up by different levels of state and non-state actors, and with differing motivations and expectations (Rodríguez-Pose and Gill 2005; Torrasi *et al.* 2010). Table 3 outlines the main types of decentralisation which vary in their degree of autonomy in fiscal and functional terms, balance of reserved and decentralised powers and responsibilities, and administrative and/or democratic accountability. Some blurring and overlap between these kinds of decentralisation is also evident in the practice and experience of empirical cases, for example where elements of administrative, political and fiscal decentralisation are combined in particular settlements and arrangements. In emphasising the importance of historical context and the evolution of national political economies, it is evident that as a ‘new state spatiality’ decentralisation will be highly variegated in different nation states (Peck and Theodore 2007).

<Table 3 about here>





In considering what any ‘economic dividend’ might mean, then, conceptualising the potential economic benefits and costs of devolution as a specific kind of decentralisation is central. Informed by the key arguments from fiscal federalism that focus upon the existence of allocative and productive efficiencies and accountability and participation, Table 4 summarises some of the main issues. Several other concerns are also important to the analytical task. First, decentralisation is widely acknowledged as a process rather than a one-off event; there is little sense in splitting the analytical frame into ‘pre-’ and ‘post-’devolution periods. Indeed, understanding and capturing the timing and lag of any potential benefits and costs flowing from decentralisation has bedevilled studies to date (McGregor and Swales 2005). Second, it is important to distinguish the expected or likely benefits and costs of specific forms of decentralisation such as devolution from what are considered the unexpected, unlikely and/or somehow additional bonus or windfall economic implications implied by the term ‘dividend’. Last, given that much of the discussion of the ‘economic dividend’ to date has focused upon potential efficiency benefits, attention is required to consider the equity concerns of the distributional impacts of decentralisation in economic, social and geographical terms.

<Table 4 about here>

While the aspiration might be to produce some kind of direct and conclusive test or evaluation of the overall net balance of economic outcomes generated from both positive and negative effects of devolution, the inter-relatedness of spatial disparities, spatial economic policy and decentralisation involved means a more finely grained and nuanced assessment and account is required. Analysts searching for the ‘economic dividend’ need to accept that it may or may not exist and that its extent and nature over time and space are likely to be highly variable and differentiated; reflecting potentially strong, weak and indifferent degrees of both positive and negative impacts as well as place-specific spill-overs from the economic into different kinds of political, social and cultural domains in the political economies of particular nation states and territories.

An ‘economic dividend’ of devolution in the UK?

The UK provides the object of analysis and is an important case to consider the evidence and meaning of any ‘economic dividend’ of devolution for several reasons. First, the UK has been marked by persistent spatial disparities, especially since the 1930s, which have endured and exerted significant influence upon the national political economy, politics and policy (Martin 1988). Figure 1 illustrates the evolution of spatial disparities since the late 1960s and reveals the growing gap between London and the Greater South East and the other nations and regions in the UK. Second, given its experience of spatial disparities, the UK has a long history of development and experimentation with spatial economic policy, punctuated by institutional innovation, ‘policy on’ and ‘policy off’ episodes alongside ongoing, periodic scrutiny and reflection upon its principles and purpose (see, for example,



Barlow 1940; Harrison and Hart 1993; House of Commons 1995; 2003). As Figure 2 shows, the UK has undertaken its own path through the different forms of spatial economic policy from the redistributive era of capital and labour subsidies up until the late 1970s through the free market retrenchment during the 1980s and emergence of more growth oriented forms from the mid-1990s (Fothergill 2005; Pike and Tomaney 2009, 2010). Significantly, the ‘economic dividend’ argument has been central to this evolution as “Centralised regional policy, the aim of which was to promote economic equity between the regions, has been replaced by a devolved regional policy which aims to promote an *economic dividend* within each region” (Morgan 2006: 3; emphasis added). Last, the UK is a highly centralised multi-national union state which only introduced significant decentralisation reforms in its particular form of limited and conditional devolution and constitutional change in the late 1990s, encompassing more decentralised governance of spatial economic policy (Marks *et al.* 2008; Morgan 2007).

< Figure 1 and 2 about here >

That ‘devolution is a process not an event’ (Davies 1999) in the words of the former Secretary of State for Wales has become a well worn descriptor that nonetheless characterizes the evolutionary and unfolding nature of decentralisation. Hence, while the analysis here is focused upon discerning the existence or otherwise of an ‘economic dividend’ in the UK following the institutional changes introduced from 1997, the argument is that such changes need to be situated in the context of



relationships between spatial disparities, spatial economic policy and decentralisation, and reflect deep seated currents and legacies from previous eras of change. Our approach is based on the combined historical paths of three key elements – spatial disparities, spatial economic policy and decentralisation – during the period 1984 to 2007 (local revenue data are only available for a shorter period from 1987).

Building upon Rodríguez-Pose and Gill (2004) and in the context of constraints in the backward reach of available data, we consider the historical evolution of spatial disparities and decentralisation but introduce a new dimension by augmenting the analysis with a quantitative measure of spatial economic policy. Further, given our emphasis upon the importance of economic growth in shaping the dynamics of the key variables, we investigate the implications of including the system's overall national economic performance in our analysis (i.e. national economic growth and national economic development). This issue has been identified as important in the fiscal federalism literature. For example, Oates (1999: 1142) suggests “it may well be that fiscal decentralisation itself has a real contribution to make to improved economic and political performance at different stages of development”. In addition, aggregate economic growth may also be considered as a proxy for the kinds of allocative and productive efficiencies said to be generated by decentralisation (Rodríguez-Pose *et al.* 2009). As far as the data availability has allowed, the analysis has gone back to situate more recent changes in their appropriate historical and economic context.

We use the Gini index (*Gini*) of regional Gross Disposable Household Income (GDHI) per head (data from Office for National Statistics) as the proxy for spatial



disparities¹. Although the aggregate nature of data does not allow us to correct for differences in household composition at the single household level, we adopted a modified OECD equivalence scale in order to take into account regional differences in household composition and size generating different economies of scale. More precisely, the following formula consisting of the ratio between aggregate income earned by households resident in region j (Y_t^j) and a measure of aggregate population taking into account differences in household size and composition across regions (S_t^j)

$$H_t^j = \frac{Y_t^j}{S_t^j} \quad \text{eq.(1)}$$

has been applied in order to compute per head values of GDHI in region “ j ” (H_t^j). The final step consisted of computing the Gini index of H_t^j across the “ R ” regions, by year, according to the formula

$$G(H^j) = \frac{\sum_{j=1}^{R-1}(\rho_j - q_j)}{\sum_{j=1}^{R-1}(\rho_j)} \quad \text{eq. (2)}$$

where $\rho_j = \frac{j}{R}$ and $q_j = \frac{H^1 + H^2 + \dots + H^j}{\sum_{j=1}^R H^j}$, with $H^j \leq H^{j+1}$ (i.e. H is non-decreasing ordered)².

¹ The choice of GDHI per head as our dependent variable is not trivial and has important implications. The choice of regional gross disposable income per capita over the Gini index of GDP per capita has the advantage of including transfers of income from individuals, companies and government in the form, for example, of social benefits (European Commission 1999). But, on the other hand, “a region that has a low level of production might have a relatively high level of income due to large social security transfers, but it would still be a less favoured region” (European Commission 2004: 25-26).

² The complete procedure, including GDHI components and computation, as well as the following measure of policy, is available from the authors on request.





Given that all measures of fiscal policy have their own regional bias (Short 1981; Armstrong and Taylor 2000), for spatial economic policy we use a proxy of policy (*Policy*) reflecting direct intervention on income. This consists of the difference between the Gini index calculated on *primary* household income per head – therefore *before* direct policy intervention on income – and the same index calculated on GDHI per head³. The latter takes into account direct policy intervention on income by means of positive elements such as social benefits received and other current transfers received (total secondary resources) and negative elements such as current taxes on income and wealth (e.g. income tax, council tax), social contributions paid (e.g. employees pension and social security contributions) and other current transfers paid (total secondary uses). Therefore, *Policy* is intended as a broad and regional version (by considering policy measures other than taxes) of the Reynolds and Smolensky (1977) index usually calculated to measure the progressiveness of tax systems. Clearly, this measure theoretically ranges between zero (reflecting total ineffectiveness of state intervention in reducing spatial disparities) and the value of the Gini index relative to primary income⁴ (reflecting the effectiveness of state intervention in reducing *all* spatial disparities characterising the distribution of primary income).

Challenging and enduring methodological issues are involved in calculating measures able to capture the degree of *autonomy* afforded to sub-national, regional and local levels of government through variegated forms of decentralisation (Martinez-Vazquez and Timofeev 2009; Torrissi *et al.* 2010). The measure of fiscal decentralisation used is based upon the local to total general government revenue ratio (*Fiscal*

³ Per head values computed using S_t^j in both cases.

⁴ This would imply a Gini index after state intervention equal to zero.



Decentralisation). This is a standard measure that is widely used in the international literature (Oates 1985, Woller and Phillips 1998, Akai and Sakata 2002, Rodríguez-Pose and Gill 2004). It provides a proxy for capturing the decentralisation of fiscal powers and responsibilities to lower tiers of government beneath the national level. In common with other proxy measures it has some limitations. As a relatively narrow financial and quantitative measure, it is unable fully to capture the distinctive and variegated nature of decentralisation forms in particular national contexts. This is relevant in the UK, for example, with very limited and uneven decentralisation of revenue-raising powers in comparison with greater autonomy over expenditure in the devolved territories through the block grant mechanism. In addition, where decentralisation is focused upon legislative and policymaking rather than fiscal powers this measure can be limited.

However, here we are examining the value of this approach in considering the UK case in the context of our wider aim of international comparison of the historical evolution of spatial disparities, spatial economic policy and decentralisation. As a result, for our specific purposes this measure is preferred to alternative measures used elsewhere in the literature. First, an expenditure-based measure is not appropriate for our analysis because the share of local to total national expenditure is not statistically correlated with our measure of spatial disparities⁵ and the data is not available across all EU member states. Second, the uneven nature of the devolution arrangements within the UK needed a measure capable of capturing the range from the weakest decentralisation in England to the strongest in Scotland. Third, alternative measures more explicitly taking into account institutional factors – such as the Regional

⁵ The Spearman correlation index between *Gini* and the share of sub-national expenditure in total expenditure is equal to 0.3727 with a p-value of 0.0961.

Authority Index (Marks *et al.* 2008) and different decentralisation factor scores (Schneider 2003) – try to capture the decentralisation of policy and law making powers but are time-invariant and provide only a temporal snap shot unable to analyse historical evolution over time. Last, the available data on Government Finance Statistics from Eurostat provides broad geographical coverage and time series to enable our broader project of international comparison and historical analysis. Therefore, given these data, measurement and commensurability constraints as well as the particular context of the UK's highly centralised institutional setting, we argue that this measure is most appropriate for the aims of this study.

Figure 3 displays the historical evolution of the three variables introduced above in the UK. The evolution of the line representing the Gini coefficient in Figure 3 shows that regional disparities have tended to rise during the period of analysis and that their behaviour has been clearly affected by national economic cycles. The period of the end of the 1980s growth witnessed a relatively steady increase in spatial disparity. But, as boom turned to bust in the recession in the early 1990s, spatial disparities in the UK fell sharply, reaching their nadir in 1992. The economic recovery that ensued signalled a return to the growth in spatial disparities, which was particularly pronounced during the last two years of the Major Conservative government and during the Blair's first Labour government, peaking in 2001. Since then, and coinciding with the greater investment in public services of the second and third Labour administrations, spatial disparities have marginally declined (Figure 3). This economic cycle-led evolution of disparities fits well with the sheltered-economy evolution of spatial disparity proposed by Rodríguez-Pose and Fratesi (2007): while the wealthier and more open regions of the South East of England experience the



vagaries of the market to a greater extent than the rest of the UK, the increasing dependence of the poorer northern and western regions on non-market oriented services – as a consequence of the relative decline of their traditional industrial base – has made them more impervious to changes in market circumstances. In addition, the differential sectoral structure and diversity of the private sector in London and the South East supports its prosperity and resilience rather than its lesser dependence upon the state *per se*. This explains the tendency for UK nations and regions to diverge in periods of boom and to converge in periods of economic crisis (Martin 1993).

< Figure 3 about here >

Having established that the evolution of spatial disparities in the UK seems to be the result of the combination of market exposure and economic cycles, to what extent has its particular form of devolution played a role in this process? The *Fiscal Decentralisation* variable in Figure 3 illustrates the association between devolution and the evolution of spatial disparities may have been more than testimonial. Decreases in sub-national government autonomy in the late 1980s and in the mid- to late 1990s due to the abolition of Metropolitan Councils and the cutting of the rate support grant (Duncan and Goodwin 1988), coincide with significant increases in spatial disparity. By contrast, the apparent rise in fiscal devolution between 1989 and





1992 is associated with the biggest decline in spatial disparities (Figure 3)⁶. While establishing a cause-effect relationship between both phenomena is impossible just by looking at Figure 3, their coincidence in time may mean that even the limited fiscal devolution policies pursued by successive British governments in periods of boom and bust may have played a non-negligible role in shaping spatial disparities.

Regarding the relationship between the evolution of spatial economic policy and the evolution of spatial disparities, the interaction of the lines points towards a situation whereby until 2003, at least, spatial economic policy reacts to – rather than shapes – changes in spatial disparity. The rise in disparities of 1988-1989 is followed by a rise in spatial policy intervention in subsequent years, while the decline in disparities of the early 1990s signals the effects of the national automatic stabilizers and a declining national state involvement in spatial economic policies. This policy trend is only redressed after 1996, when the evidence of spatial disparities rising anew becomes clear (Figure 3). Only after 2003 there seems to be a possibility of spatial economic policies shaping spatial disparities and not vice versa (Figure 3). But to what extent can we say that changes in spatial disparity are the result of a combination of national economic cycles and variations in fiscal decentralisation and spatial economic policies? In order to investigate further the changing relations between spatial disparities, spatial economic policy and decentralisation for the UK introduced above and to better discern which factors may be related to shifts in growth patterns and to changes in policies we also consider changes in national economic performance (*Growth*). The rationale here is that all the variables considered are linked with the

⁶ We address the issue of the *reliability* of the devolution measure utilised in this analysis further in this section. At this stage both the “decrease in sub-national government autonomy” and the “massive rise in fiscal devolution” should be interpreted as if (our measure of) Fiscal Decentralisation would be able to reflect real change in the central-local relationship.

economic performance of the system as a whole and that the relation between each and economic performance is not clear *ex ante*. As mentioned earlier, shifts in national economic growth – or changes in national economic cycles – may be the primary force behind the trajectory of spatial disparities in the UK. Figure 4 compares the evolution of economic performance and regional disparities for the UK for the period 1984-2007.

< Figure 4 about here >

The analysis illustrates the close relationship between *national* economic performance and spatial disparities (Figure 4). With the exception of the most recent period (2005-2007), the lines mirror each other with rises and declines in national growth tending to be followed by similar rises and declines – albeit with different time lags depending on the period – in spatial disparities at the regional level (Figure 4). The dynamic of the relation between spatial disparities and national economic growth sheds some light on the varied and uneven nature of the relationship between spatial disparities and devolution and how it changes direction during specific time periods. Decomposing *Fiscal Decentralisation* into its two main components, namely local revenue (*Local revenue*) and general government revenue (*General revenue*), there seems to be a mechanism linking spatial disparities and devolution with the national economic cycle. By including a one-year lagged growth rate (*Lagged growth*), Table





5 shows: (i) the presence of a *negative* correlation⁷, though statistically neutral at 5% significance level, between economic performance (*Growth* and *Lagged growth*) and the annual change in the local revenue (*Change local revenue*); and, (ii) a *positive* correlation between the former and the annual rate of total revenue change (*Revenue change*). This underlines that, in times of economic expansion with *increased* spatial disparities, the index of decentralisation – their ratio – has *decreased* and vice versa. This evidence could be explained in terms of the traditional automatic stabilising effect of central taxation with increases during the upturn (*via* income tax, VAT etc.) and decline during recession, and the (statistically) neutral correlation between economic performance and local revenue generally protected during recession (see point (i) above).

< Table 5 about here >

This analysis suggests that the critical causal relationship is between spatial disparities and national economic performance. Moreover, given the temporal lag in the relation between economic performance and other variables emerging from the analysis above, especially *via* total revenue (considering also that the correlation between its change and *past* change in economic performance is higher than the one with *present* economic performance, respectively 0.7370 and 0.5218), we hypothesise that economic performance could be the *initiating* factor and that other variables *follow* its

⁷ The results reported in Table 4 and 5 refer to the Pearson correlation index. However, when resorting to alternative indices, such as the Spearman's rank correlation coefficients, which allow for non-linear correlation, the magnitude and significance of the coefficients is, by and large, unchanged.

movement with opposite dynamics and explanations. In other words, the interpretation of the empirical evidence of the relation between economic performance and spatial disparities is that – if not wholly driven by the economic cycle – the evolution of spatial disparities is strongly related to *national economic performance*, rather than the result of any ‘economic dividend’ of devolution. This analysis is based upon our chosen proxy for decentralisation which, while commonly used in the literature, is – as we have acknowledged – not without its weaknesses (Martinez-Vazquez and Timofeev 2009). The magnitude and direction of causality, then, will benefit from further investigation in the context of our cross-national comparative study (see, for example, Torrisi *et al.* 2011).

Our analysis suggests that spatial disparities depend heavily upon national economic performance which, in turn, is strongly driven by geographical concentration of economic activity in London and the Greater South East. The eventual ‘dividend’ in terms of spatial disparities is therefore rooted in the *national economic performance* strongly shaped by London and the Greater South East. In order to further investigate these arguments, we perform an analysis on *income polarisation* across UK regions. Since it is established that income inequality measures could be low even in the presence of a strong polarisation (Esteban and Ray 1994), it is worth analysing them separately. Although different indices of polarisation have been developed in the literature (Wolfson, 1994; Wang and Tsui, 2000 ; Chakravarty and Majumder, 2001), we adopt the widely used Generalised Esteban, Gardin and Ray (2007) (EGR) polarisation index. Therefore, we apply the following formula to regional GDHI per head as defined above



$$P^{EGR}(f, \alpha, \rho^*, \beta) = \frac{1}{2} \left(\sum_{j=1}^m \sum_{k=1}^m p_j^{1+\alpha} p_k |\mu'_j - \mu'_k| - \beta (G(f) - G(\rho^*)) \right) \quad \text{eq.(3)}$$

where $\mu'_j = \frac{\mu_j}{\mu_j}$ and p_j denote respectively the (corrected) average income and the numerical weight of group j ; $\alpha \in [1, 1.6]$ is the parameter that captures the degree of sensitivity of our measure of polarisation, and $\beta \geq 0$ is the parameter used to express the weight assigned to the error term $(G(f) - G(\rho^*))$ in determining group composition.

Empirical results in the four-groups case – this choice being supported by previous studies on regional clusters (Rodríguez-Pose and Vilalta-Bufi 2005, Ezcurra 2009) – are shown in Figure 5. This figure, even with exceptions characterised by increasing spatial disparities linked with decreasing polarisation (in 1984-1985, to some extent in 1987-1988 and during the economic recovery of 1992-1993) and vice versa (1986-1987, 1991-1992 and the relatively recent period 2004-2005), confirms empirically the positive correlation between spatial disparities and polarisation at the regional level in the UK during the whole period 1994-2003 and the more recent upturn of both measures in 2005-2006 and downturn relative to 2006-2007. We interpret this close path involving regional disparities and regional polarisation, combined with the strong relation between the former and national economic performance discussed above, as a preliminary confirmation of the role played by the ‘winning’ (Ezcurra 2009) region of London and the Greater South East in driving national economic performance and in determining its consequences for spatial disparities.



< Figure 5 about here >

A final step, building upon the analysis of economic growth and *Fiscal decentralisation* components, considers the correlations between variables in order to capture the whole set of overall relations between each other. Table 6 shows this correlation matrix. The correlations confirm and support the analysis above. Nonetheless, some points are worth stressing. First, a rather counterintuitive positive overall correlation between spatial policy and spatial disparity (0.6201) is found. Indeed, given the formula used to calculate our measure of spatial economic policy, *ceteris paribus*, an increase in regional disparities (Gini index relative to GDHI) will result in a decrease in the measure of spatial economic policy. This is what registered empirically, for example, during 1984-1986 with increasing spatial disparities linked with a decrease in the measure of regional policy. However, our analysis confirms that, overall, disparities in (primary) income *before* state intervention rose more than disparities involving GDHI – i.e. once measures of policy operated – generating a positive correlation between the spatial economic policy and spatial disparities. Second, a negative overall correlation between decentralisation and spatial disparities (-0.4807) is confirmed. Fiscal decentralisation is likely to increase the degree of efficiency in the allocation of resources which may give rise to a spatially even distribution of income. However, further consideration of national economic performance and spatial polarisation indicators – combined with the analysis of correlations reported in Table 5 – shows that this interpretation could be misleading. Indeed, considering the level and growth rate of national GDP, a strong correlation between spatial disparities, spatial polarisation and economic performance arises (for



the former and *GDP*, *Growth*, and *Lagged growth* respectively 0.7844, 0.3905 and 0.4522, while, regarding polarisation, a correlation of 0.7165, 0.331 and 0.4801 is registered with *GDP*, *Growth* and *Lagged growth* respectively). It is important too that the coefficient for *Lagged growth* is – statistically significant at 5% level – and slightly higher than the one for *Growth* (although not statistically significant at 5%) in both cases confirming the existence of a temporal lag between both spatial disparities and polarisation and their correlation with national economic performance.

< Table 6 about here >

Overall, the interpretation here sees the negative correlation between regional disparities and devolution as a *spurious* one that could be explained in terms of the positive correlation between spatial disparities, spatial polarisation, and national economic performance combined with the negative correlation between economic performance and the share of local revenue (-0.3538 and -0.7517 respectively for *Growth* and *Lagged growth*)⁸. This evidence challenges the argument in favour of a “strong positive correlation between this measure of devolution and the downturn in regional per capita differentials” (Calamai 2009: 1140) and highlights the need for further investigation of the dynamic of the role played by economic growth and national growth poles. In terms of our analysis, these results have to be interpreted in the sense that the simultaneous consideration of the historical path of spatial disparity, spatial economic policy and devolution as separate variables is meaningful given that

⁸ An ADF test showed there was no co-integration between variables.



both spatial economic policy and fiscal decentralisation measures incorporate distinct information that cannot be properly inferred from the simple consideration of spatial disparity only. This evidence gives further empirical strength to the results reported in this paper.

Conclusions

More than a decade after the constitutional reforms of the late 1990s which began devolution in parts of the UK, this paper has sought to assess and reflect upon the evidence and enduring meaning of the ‘economic dividend’ of devolution in the UK. Acknowledging the difficulties and methodological challenges involved in seeking to discern such a complex, subtle and difficult to measure entity (Jeffery 2006), an institutionalist and quantitative approach has been adopted. This study has sought to embed any relationships between decentralisation, spatial economic policy and changes in spatial disparities in their appropriate context of the unfolding histories of institutional, political and economic change over time and space within the particularity of the UK state. The UK’s highly centralised system has marked its particular evolution and established a constrained context for any ‘economic dividend’ to emerge. This contrasts with the more substantive and extensive fiscal decentralisation in other countries which have experienced stronger, more widespread and positive effects under certain conditions (Rodríguez-Pose and Ezcurra 2010).

The analysis has revealed, first, the varied and uneven nature of the relationships between spatial disparities, spatial economic policy and decentralisation in the UK, with important changes in direction during the period under analysis. Second, the role





of national economic growth is pivotal in explaining the evolution of spatial disparities and the nature and extent of their relationship with the particular forms of spatial economic policy and decentralisation deployed. The dominance of national economic growth within the current growth-oriented forms of spatial economic policy has reinforced its decisive explanatory role, underlining the emergent trade-off between national economic growth and politically tolerable levels of spatial disparities (Martin 2008). Last, there was limited evidence that any ‘economic dividend’ of devolution has emerged yet but this remains difficult to discern because the likely effects are over-ridden by the role of national economic growth in decisively shaping the pattern of spatial disparities and in determining the scope and effects of spatial economic policy and decentralisation.

Given the central importance of the geographical concentration of growth in London and the Greater South East to national economic growth and the role of state policy and investment in seeking to accommodate its contradictions (Pike and Tomaney 2010), this ‘super-region’ (Birch *et al.* 2009) could be interpreted as the principal beneficiary of the turn to a more growth-oriented spatial economic policy and the modest decentralisation evident within the devolved arrangements in the English regions compared to the rest of the UK. The advancement of the interests of an already prosperous albeit highly unequal region sits uneasily with the ways in which the ‘economic dividend’ of devolution was promoted as a means to address the ‘economic deficit’ and ameliorate the marked spatial disparities between the nations and regions within the UK. This concern chimes with anxiety amongst commentators and parliamentarians evident in the mid-2000s: “In the unlikely event that devolution yields a uniform economic dividend in each region, the result does nothing to redress

the territorial inequalities at the heart of the North-South divide. Treating unequals equally is not a recipe for territorial justice” (Morgan 2006: 3; see also House of Commons 2003).

The findings point toward the conclusion that even when it might be discerned, any ‘economic dividend’ of devolution is likely to be highly variable, taking different forms and degrees, and may be episodic or fleeting in its duration. It appears highly contingent upon particular paths of state institutional change across a range of scales and to be strongly shaped by national economic growth, the nature of fiscal autonomy and capacity and willingness for redistribution on the part of national central states. This examination of the UK case highlights the difficulties of attempting to devise simple tests and of seeking to make more general and conclusive claims about ‘economic dividends’ resulting from devolution. Indeed, the particularities of the UK political economy – such as its lack of written constitution and relatively short policy regime duration – may even amplify and prolong such uncertainties. We acknowledge, however, that it might be that the timescale of our assessment may be too foreshortened and that much more than a decade needs to elapse before the effects of any ‘economic dividend’ become apparent. In addition, improvements are needed in data availability and methodological development to help create proxies and indicators able to capture the variegation of spatial economic policy approaches, forms of decentralisation and evolving spatial disparities in different national contexts in systematic and comparable ways. Despite these caveats, the study is worthwhile in contributing to the continued relevance of the concern with the economic and indeed other dividends of devolution that warrant further studies, especially international comparative work.



Acknowledgements

The paper has benefited from the support of the European Research Council under the European Union's Seventh Framework Programme (FP7/2007-2013)/ERC grant agreement n° 269868 and of a Leverhulme Trust Major Research Fellowship. The research is also part of the Prociudad-CM programme and of the UK Spatial Economics Research Centre. The views expressed are those of the authors and do not necessarily represent those of the funders.



References

- Akai N and Sakata M ,2002, “Fiscal decentralization contributes to economic growth: evidence from state-level cross-section data for the United States” *Journal of Urban Economics* **52** 93–108
- Armstrong H and Taylor J ,2000, *Regional Economics and Policy* (Blackwell, Oxford)
- Ashcroft B Swales J K and McGregor P G ,2005, “Is devolution good for the Scottish economy? A framework for analysis” *Devolution Briefings No 26* March ESRC Devolution and Constitutional Change Programme http://www.devolution.ac.uk/Briefing_papers.htm; Accessed: 28 April 2010
- Balaguer-Coll M T Prior D and Tortosa-Ausina E ,2010, *Devolution Dynamics of Spanish Local Government* WP-EC 2010-01 Instituto Valenciano de Investigaciones Económicas IVIE Spain
- Balls E and Healey J ,2001, *Towards a New Regional Policy* (The Smith Institute, London)
- Barlow Sir M ,1940, *Report of the Royal Commission on the Distribution of Industrial Population* (HMSO, London)
- Birch M Harding A and Rees J ,2009, “Having it both ways: explaining the contradiction in English spatial development policy” *International Journal of Public Sector Management* **22** 7 587-604
- Calamai L ,2009, “The link between devolution and regional disparities: Evidence from the Italian regions” *Environment and Planning A* **41** 5 1129-1151
- Chakravarty S R and A Majumder ,2001, “Inequality, polarization and welfare: theory and applications” *Australian Economic Papers* **40** 1-13
- Davies R ,1999, *Devolution: A Process Not An Event* (Institute of Welsh Affairs, Cardiff)
- Duncan S and Goodwin M ,1988, *The Local State and Uneven Development* (Polity, Cambridge)
- Esteban J M C Gardin et al ,2007, “Extension of a measure of polarization with an application to the income distributions of five OECD countries” *Journal of Income Inequality* **5** 1-19.
- Ezcurra R. ,2009, “Does Income Polarization Affect Economic Growth? The Case of the European Regions” *Regional Studies* **43** 2 267-285.
- Fothergill S. ,2005, “A new regional policy for Britain” *Regional Studies* **39** 5 659-667



Harrison R T and Hart M ,1993, Eds, *Spatial Policy in a Divided Nation* (Jessica Kingsley, London)

Hayman A ,2008, “Welsh devolution has ‘little economic impact’” *Regeneration and Renewal* 10 October (Haymarket, London)

House of Commons ,1995, *Regional Policy* Trade and Industry Committee Fourth Report Session 1994-1995 (HMSO, London)

House of Commons ,2003, *Reducing Regional Disparities in Prosperity* ODPM Committee Housing, Planning, Local Government and the Regions Committee Ninth Report of Session 2002-03 Vol. 1 Report HC 492-I (TSO, Norwich)

Jeffery C ,2006, *Final Report of the Devolution and Constitutional Change Programme* School of Social and Political Studies University of Edinburgh

Lobao L Martin R and Rodríguez-Pose A ,2009, “Editorial: Rescaling the state: new modes of institutional–territorial organization” *Cambridge Journal of Regions, Economy and Society* **2** 1 3-12.

Marks G Hooghe L. and Schakel A H ,2008, “Patterns of regional authority” *Regional and Federal Studies* **18** 2 and 3 167-181.

Martin R ,1988, “The political economy of Britain’s North-South divide” *Transactions of the Institute of British Geographers* **13** 389-418

Martin R ,1993, “Remapping British regional policy: the end of the North-South divide?” *Regional Studies* **27** 8 797-805

Martin R ,2008, “National growth versus spatial equality? A cautionary note on the new ‘trade-off’ thinking in regional policy discourse” *Regional Science Policy and Practice* **1** 1 3-13

Martin R and Sunley P ,1997, “The post-Keynesian state and the space economy” in R Lee and J Wills ,Eds, *Geographies of Economies* (Arnold, London) 278-89

Martinez-Vazquez J and Timofeev A ,2009, “A fiscal perspective of state rescaling” *Cambridge Journal of Regions, Economy and Society* **2** 85-105.

McGregor P G and Swales K ,2005, “Economics of devolution/decentralization in the UK: Some questions and answers” *Regional Studies* **39** 4 477-494

Morgan K ,2006, “Devolution and development: Territorial justice and the North-South divide” *Publius: Journal of Federal Studies* **36** 1 189-206

Morgan K ,2007, “The polycentric state: New spaces of empowerment and engagement?” *Regional Studies* **41** 9 1237-1251



Murphy P and Caborn R ,1996, “Regional government: An economic imperative” in S Tindale ,Ed, *The State and the Nations* (IPPR, London) 184-221

Oates W E ,1985, “Searching for leviathan: an empirical study” *American Economic Review* **75** 748–757

Oates W E ,1999, “An essay on fiscal federalism” *Journal of Economic Literature* **37** 3 1120-1149

OECD ,2010, *Regional Development Policies in OECD Countries* (OECD, Paris)

Overman H ,2010, *Urban Renewal and Regional Growth: Muddled Objectives and Mixed Progress* Centre for Economic Performance Election Analysis CEP LSE London

Peck J and Theodore N ,2007, “Variegated capitalism” *Progress in Human Geography* **31** 6 731-772

Pike A and Tomaney J. ,2009, “The state and uneven development: The governance of economic development in the post-devolution UK” *Cambridge Journal of Regions Economy and Society* **2** 1 13-34.

Pike A and Tomaney J ,2010, “State and economy: governing uneven development in the UK” in N M Coe and A Jones ,Eds, *The Economic Geography of the UK* (Sage, London) 91-109

Reynolds M and Smolensky E ,1977, *Public Expenditures, Taxes, and the Distribution of Income: The United States, 1950, 1961, 1970* (Academic Press, New York)

Rodríguez-Pose A and Ezcurra R ,2010, “Does decentralization matter for regional disparities? A cross-country analysis” *Journal of Economic Geography* **10**

Rodríguez-Pose A and Fratesi U ,2007, “Regional business cycles and the emergence of sheltered economies in the southern periphery of Europe” *Growth and Change* **38** 4 621-648.

Rodríguez-Pose A. and Gill N. ,2004, “Is there a global link between regional disparities and devolution?” *Environment and Planning A* **36** 12 2097-2117.

Rodríguez-Pose A and Gill N ,2005, "On the 'economic dividend' of devolution" *Regional Studies* **39** 4 405-420

Rodríguez-Pose A and Sandall R ,2008, “From identity to the economy: analysing the evolution of the decentralisation discourse” *Environment and Planning C: Government and Policy* **26** 1 54-72

Rodríguez-Pose Tijmstra S J R and Bwire A ,2009, “Fiscal decentralisation, efficiency and growth” *Environment and Planning A* **41** 9 2041-2062



Rodríguez-Pose A and M Vilalta-Bufi ,2005, “Education, migration, and job satisfaction: the regional returns of human capital in the EU” *Journal of Economic Geography* **5** 545-566.

Schneider A ,2003, “Decentralisation: Conceptualization and measurement” *Studies in Comparative International Development* **38** 3 32-56.

Short J ,Ed, ,1981, *Public Expenditure and Taxation in UK Regions* (Gower, Farnborough Hants)

Tomaney J Pike A Rodríguez-Pose A Torrissi G and Tselios V ,2011, *Decentralisation Outcomes: A Review of Evidence and Analysis of International Data* Final Report to Department of Communities and Local Government CURDS Newcastle Upon Tyne

Torrissi G Pike A Rodríguez-Pose A Tomaney J and Tselios V ,2010, *Defining and Measuring Decentralisation: A Critical Review* Unpublished Paper CURDS Newcastle Upon Tyne

Torrissi G Pike A Tomaney J and Tselios V ,2011, *(Re-)exploring the Link between Devolution and Regional Disparities in Italy* Unpublished Paper CURDS Newcastle Upon Tyne

Wang Y and K Tsui ,2000, “Polarization orderings and new classes of polarization indices” *Journal of Public Economic Theory* **2** 349-363.

Wolfson M ,1994, “Divergent inequalities: theory and empirical results” *The Review of Income and Wealth* **43** 401-22

Woller G M and Phillips K ,1998, “Fiscal decentralisation and LDC economic growth an empirical investigation” *Journal of Development Studies* **34** 139–148

Wren C ,2005, “Regional grants: Are they worth it?” *Fiscal Studies* **26** 2 245-75



Table 1: Redistributive, Free-Market and Growth-oriented Spatial Economic Policy

| Characteristic | Redistributive | Free-market | Growth-oriented |
|---|--|---|---|
| Economic theory | Keynesian growth theory | Neo-classical (exogenous) growth theory | New (endogenous) growth theory |
| Causal explanation of spatial disparities | Low aggregate demand and investment, structural weaknesses | Inherited factor endowments and quality, inflexibility and immobility in factor markets | Constructed factor endowments and increasing returns generating productivity and innovation differentials |
| Adjustment process | Spatial disparities persist through cumulative causation, multiplier, spread and backwash effects | Factor market adjustment returns to equilibrium and convergence reduces spatial disparities | Agglomeration and spill-over effects, national growth and spatial disparity trade-off |
| Policy rationales | Redistribution for economic efficiency and spatial and social equity and balance | Improving factor market efficiency, flexibility and mobility | Market failures or equity |
| Policy instruments | Automatic capital and labour subsidies, industrial development controls, infrastructure investment | Regional Selective Assistance, enterprise grants for SMEs and new start-ups | Innovation grants, Venture capital funds |
| Institutional organisation | Centralised, national | Centralised, national | Decentralised, sub-national, regional, city(-regional) and/or local |
| Geographical focus and scope | Regional | Regional, local and urban | City(-regional) |
| Political-economic project | Social Democratic | New Right, Neo-liberal | Third Way, Neo-liberal |
| Language | Regional inequalities, redistribution | Regional and local divides, trickle-down | Spatial disparities, performance gaps spill-overs |

Source: Authors' research



Table 2: Paradigm shift of regional development policy

| | Old paradigm | New paradigm |
|--------------------------------|---|---|
| Problem recognition | Regional disparities in income, infrastructure stock and employment | Lack of regional competitiveness, underused regional potential |
| Objectives | Equity through balanced regional development | Competitiveness and equity |
| General policy framework | Compensating temporally for local disadvantages of lagging regions, responding to shocks (e.g. industrial decline) <i>(Reactive to problems)</i> | Tapping underutilised regional potential through regional programming <i>(Proactive for potential)</i> |
| - Theme coverage | Sectoral approach with a limited set of sectors | Integrated and comprehensive development projects with wider policy area coverage |
| - Spatial orientation | Targeted at lagging regions | All-region focus |
| - Unit for policy intervention | Administrative areas | Functional areas |
| - Time dimension | Short term | Long term |
| - Approach | One-size-fits-all approach | Context-specific approach (place-based approach) |
| - Focus | Exogenous investments and transfers | Endogenous local assets and knowledge |
| Instruments | Subsidies and state aid (often to individual firms) | Mixed investment for soft and hard capital (business infrastructure, labour market, infrastructure) |
| Actors | Central government | Different levels of government, various stakeholders (public, private, NGOs) |

Source: OECD (2010: 13)



Table 3: Types of Decentralisation

| Fiscal | Political | Administrative | Deconcentration | Delegation | Devolution |
|---|--|---|--|---|--|
| Central governments ceding fiscal autonomy to non-central government entities | Degree to which central government allows non-central government entities to undertake the political functions of governance; degree to which political actors and issues are significant at the local level and are at least partially independent from those at the national level | How much autonomy non-central government entities possess relative to central control | Central government that disperses responsibility for a policy to its field offices; powers are transferred to lower-level actors who are accountable to their superiors in a hierarchy | Transfer of policy responsibility to local government or semi autonomous organizations that are not controlled by the central government but remain accountable to it | Central government allows quasi-autonomous local units of government to exercise power and control over the transferred policy |

Source: Adapted from Torrisi *et al.* (2010)



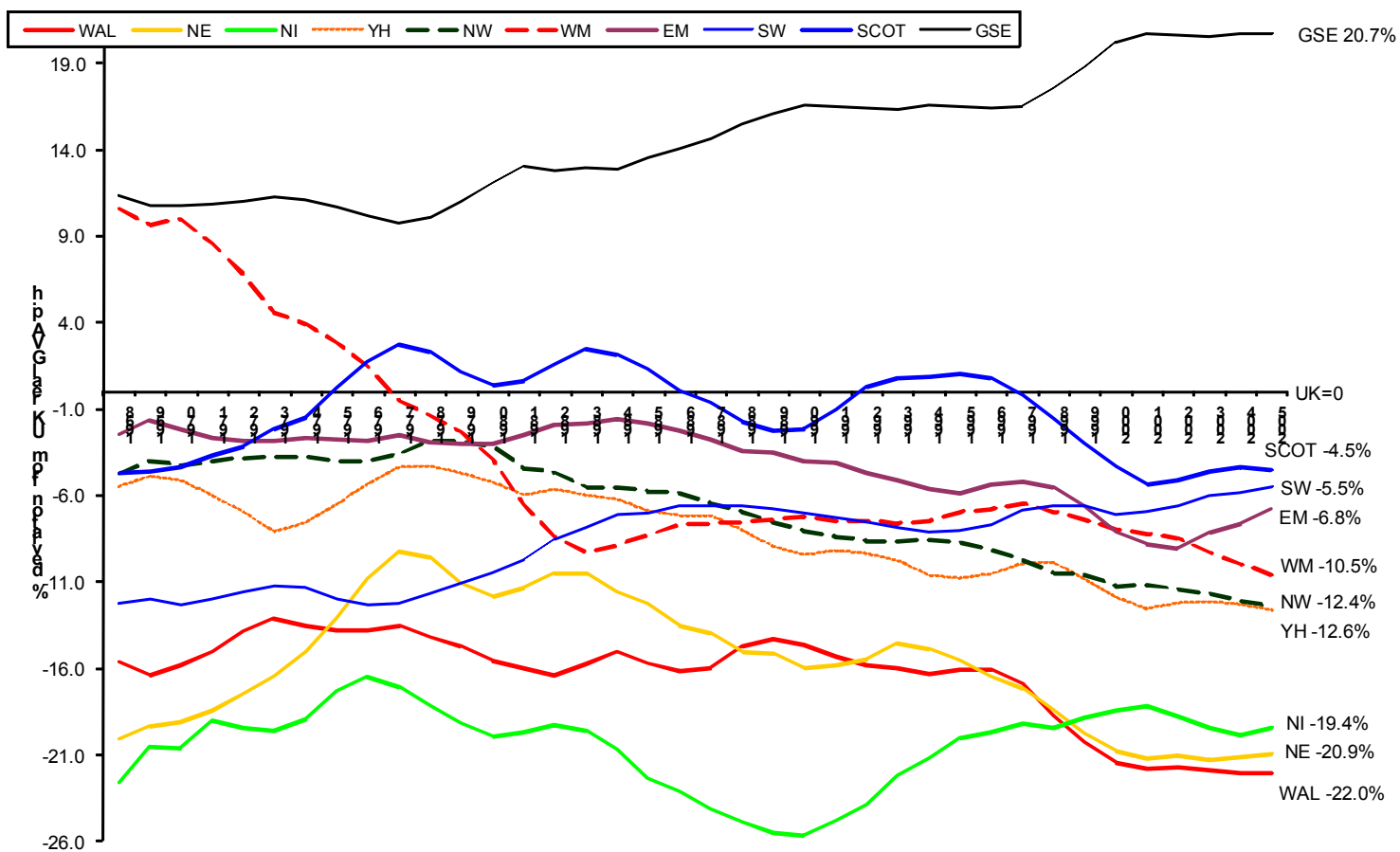
Table 4: Potential Economic Benefits and Costs of Devolution

| Potential Benefits | Potential Costs |
|--|--|
| Devolved policies better reflect territorial preferences (allocative efficiencies) | Additional administrative costs of additional layers of government and/or governance institutions |
| Improved knowledge of territorial economic potential (productive efficiencies) | Loss of scale economies in policy formulation and delivery Increased ‘rent-seeking’ by interest groups better able to influence sub-national territorial rather than national institutions |
| Democratic accountability improves efficiency of policy formulation and implementation, fosters innovation | Weaker disciplines of monitoring and evaluation (national finance ministries as tougher drivers of efficiency than territorial institutions) |
| Fiscal autonomy provides hard budget constraints and (where applicable) tax-varying power allows marginal changes to taxation and spending | Budget constraints increasingly tied to territorial fiscal capacity Weak incentives due to lack of mechanism linking public spending with tax revenues raised within sub-national territories |
| Lower coordination and compliance costs vis-à-vis the rest of the national territory | Reduced coordination with the rest of the national territory with possible negative spill-over effects both on and from sub-national territories |

Source: Adapted from Ashcroft *et al.* (2005: 3)



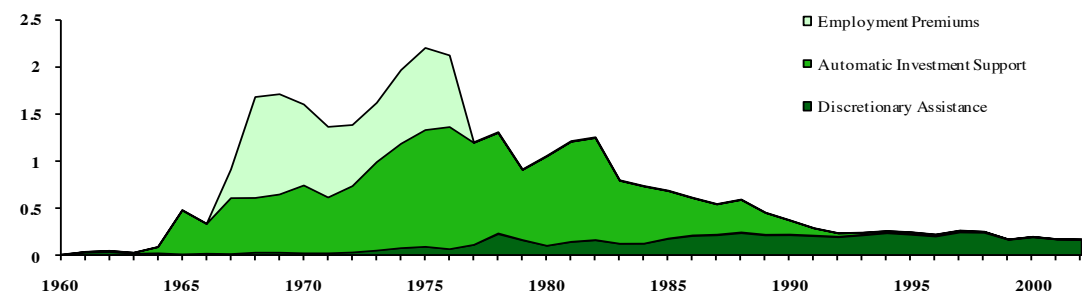
Figure 1: GVA per head by region and nation, 1968-2005



Source: Calculated from ONS

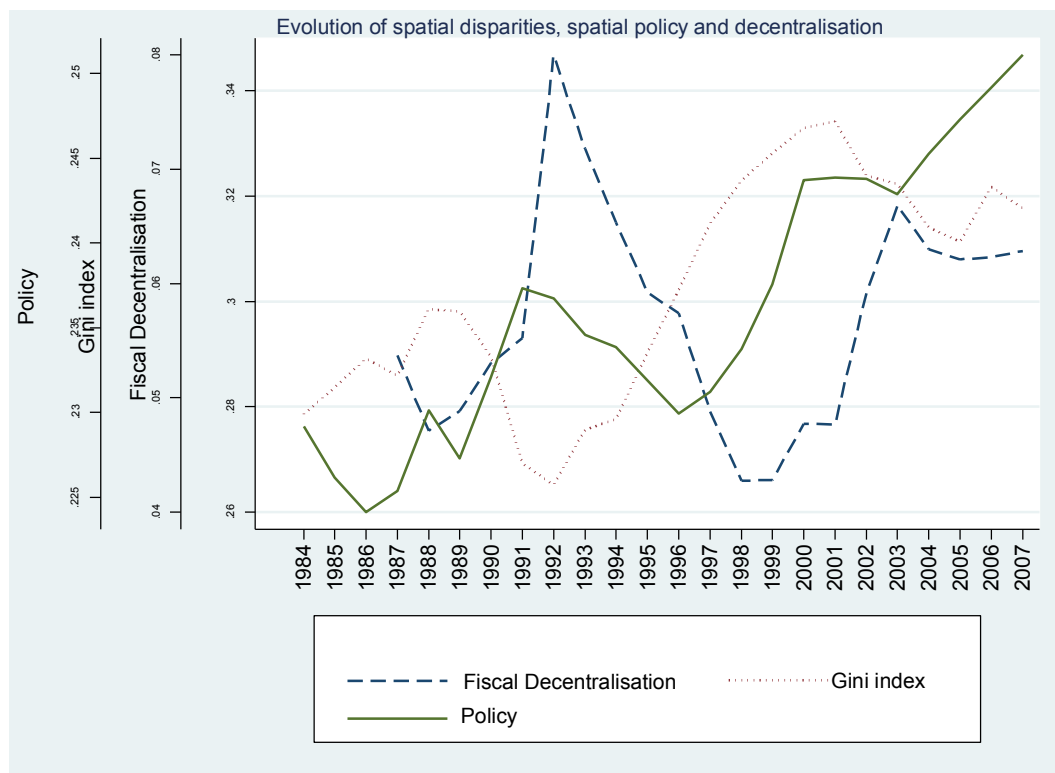


Figure 2: Expenditure on Regional Industrial Assistance, 1960-2002



Source: Wren (2005) (Figures are for actual grant payments at constant prices for Great Britain)

Figure 3: Evolution of spatial disparities, spatial economic policy and decentralisation



Fiscal Decentralisation: share of local revenue on total government revenue; Gini index: Gini index of regional Gross Disposable Household Income per head (GDHI); Policy: Gini index of regional *primary* household income and Gini index of GDHI. For further details see Appendix.

Source: Authors' elaboration on data from ONS



Figure 4: Evolution of spatial disparities and national economic performance

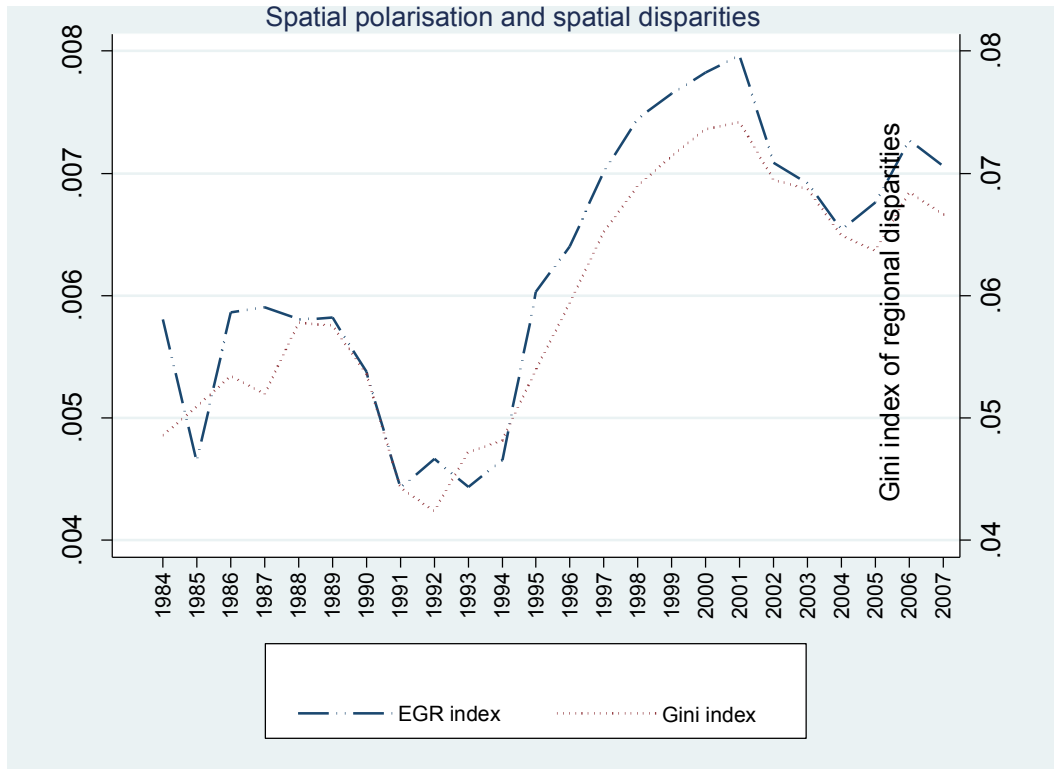


Gini index: Gini index of regional Gross Disposable Household Income per head (GDHI); Growth: annual growth rate of national Gross Domestic Product. For further details see Appendix.

Source: Authors' elaboration on data from ONS and Eurostat



Figure 5: Evolution of spatial disparities and spatial polarisation



Gini index: Gini index of regional Gross Disposable Household Income per head (GDHI); EGR index: generalised measure of income polarization ($n=4$, $\delta=1.6$, $\lambda=1$). For further details see Appendix.

Source: Authors' elaboration on data from ONS.



Table 5: Pearson correlation between national economic performance and component of decentralisation index

| | <i>Growth</i> | <i>Lagged growth</i> | <i>Revenue change</i> | <i>Change local revenue</i> |
|-----------------------------|---------------|----------------------|-----------------------|-----------------------------|
| <i>Growth</i> | 1 | | | |
| <i>Lagged growth</i> | 0.6382* | 1 | | |
| <i>Revenue change</i> | 0.4951* | 0.7041* | 1 | |
| <i>Change local revenue</i> | -0.3614 | -0.1728 | -0.1751 | 1 |

* significant at 5%

Source: Authors' elaboration on data from ONS and Eurostat

Growth: annual growth rate of national Gross Domestic Product; Lagged Growth: one-year-lagged annual growth rate of national Gross Domestic Product; Revenue change: annual change rate of General Government revenue; Change local revenue: annual change rate of Local revenue.



Table 6: Pearson correlation between regional disparities, national economic performance, devolution and spatial economic policy

| | <i>Gini</i> | <i>GDP</i> | <i>Growth</i> | <i>Lagged growth</i> | <i>Fiscal decentralisation</i> | <i>Policy</i> |
|--------------------------------|-------------|------------|---------------|----------------------|--------------------------------|---------------|
| <i>GiniI</i> | 1 | | | | | |
| <i>GDP</i> | 0.7822* | 1 | | | | |
| <i>Growth</i> | 0.3226 | 0.0029 | 1 | | | |
| <i>Lagged growth</i> | 0.4581* | 0.0303 | 0.6382* | 1 | | |
| <i>Fiscal decentralisation</i> | - | 0.0822 | - | -0.7517* | 1 | |
| <i>Policy</i> | 0.5865* | 0.9148* | - | -0.2372 | 0.2767 | 1 |
| <i>Polarisation index</i> | 0.9561* | 0.7165* | 0.3301 | 0.4801* | -0.5197* | 1 |

*significant at 5%

Source: Authors' elaboration on data from ONS and Eurostat

Gini index: Gini index of regional Gross Disposable Household Income per head (GDHI); GDP: Gross Domestic Product; Growth: annual growth rate of national Gross Domestic Product; Lagged Growth: one-year-lagged annual growth rate of national Gross Domestic Product; Fiscal Decentralisation: share of local revenue on total government revenue; Policy: Gini index of regional *primary* household income and Gini index of GDHI. For further details see Appendix.

